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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,606	10/30/2001	Takashi Kaku	FUJI 19.088	4151
26304	7590	07/27/2005	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP			LU, JIA	
575 MADISON AVENUE			ART UNIT	
NEW YORK, NY 10022-2585			PAPER NUMBER	

2634

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,606

Applicant(s)

KAKU ET AL.

Examiner

Jia W. Lu

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 5, 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 5,708,703, in view of JP 58073252 A.

- a. Regarding claims 1 and 5, patent '703 discloses a system with equalization processing that comprises the steps of extracting information on the length of the transmission line (a line characteristics, see fig 3, element 200) of the received signal and performing equalization processing while switching equalization characteristics (fig 3, elements 302 and 304). However, patent '703 does not meet the following limitation:

"..according to an **on-off state of a switching element** in an apparatus that is connected to the transmission line;"

While patent '703 does not teach the equalization processing of this specific characteristic of the transmission line, patent '252 teaches that the fluctuation in transmission due to on-off switching is an undesirable transmission characteristic which effect should be mitigated. Because

patent '703 treats the line length (figure 3, element 200) as a characteristic that results in varying transmission line characteristics, it mitigates its effect using an equalizer system. Therefore, it would have been obvious to one ordinarily skilled in the art to use this equalization system to treat other fluctuations in transmission characteristics, such as one caused by on-off-switching, in order to reduce complexity of the system resulting from varying transmission characteristics.

- b. Regarding claims 2 and 6, Patent '703 discloses the use of a reference voltage (column 5, lines 30-40) that is a function of the line condition, and the detection of change point of transmission line characteristics by using fluctuation of amplitude of reference voltage (column 5, lines 49-64).
- c. Regarding claim 9, Patent '703 discloses a system comprising equalization processing parts each corresponding to different transmitted signal characteristics (fig. 3, elements 302 and 304), and a part switching equalization processing parts in accordance with changes in transmission line (fig 2, element 214).
- d. Regarding claim 10, Patent '703 discloses a part holding equalization processing parameters for different transmission line characteristics (fig 3, element 105), and a part setting equalization parameters corresponding to specific transmission line characteristics (fig 2, element 214).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 5,708,703 as applied to claims 1 and 5 above, further in view of US patents 5,424,849 and 4,334,312. Patent '703 discloses the method of equalization, but it fails to address the steps of vectorization and adjusting incoming phases with respect to a reference phase. Patent '849 describes a system comprising signal synchronization (column 7, lines 61-68) which involves the step of extracting a basic frequency signal from sent signal, incoming signal phase adjustment with respect to control (reference) phase (column 10, lines 25-30), and a switching signal output based on the control phase (column 12, lines 27-36). Patent '312 describes a phase synchronizing circuit that uses signal vectors in signal synchronization (column 1, lines 40-47). One ordinarily skilled in the art would combine the use of vector analysis in phase comparison and equalization for ease of handling, manipulation and calculations signals.
3. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patents 5,708,703, 5,424,849 and 4,334,312 as applied to claim 3 and 7 above, further in view of US patent 6,438,185. In patent '185, Mikko Huttunen discloses an equalization method that includes equalization processing for each period of received signal having fluctuations resulting from transmission, and

updating of a reference signal based on error comparison (see abstract). It would have been obvious to one ordinarily skilled in the art to employ this system in the use of claimed invention with switching equalizers in order to decrease the error margin of best defined signal path within a period.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042. The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jia Lu
Examiner



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800